

ADDITIONAL NOTES ON THE GENUS *NEOSPARTON*. I

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NEOSPARTON Griseb.

Additional bibliography: Latzina, *Lilloa* 1 [Index 2]: 189. 1937; Mold., *Phytologia* 45: 349--352. 1980.

NEOSPARTON APHYLLUM (Gill. & Hook.) Kuntze, *Rev. Gen. Pl.* 3 (2): 254. 1898.

Synonymy: *Verbena aphylla* Gill. & Hook. in Hook., *Bot. Misc.* 1: 161, pl. 46. 1829. *Neosparton aphyllum* Kuntze apud Thiseit.-Dyer, *Ind. Kew. Suppl.* 2: 123. 1904. *Neosparton aphyllum* (Gill. ex Hook. & Arn.) Kuntze apud Latzina, *Lilloa* 1: 189. 1937. *Neosparton andinum* Kurtz ex Mold., *Prelim. Alph. List Inv. Names* 33, in syn. 1940.

Bibliography: Hook., *Bot. Misc.* 1: 161, pl. 46. 1829; Steud., *Nom. Bot. Phan.*, ed. 2, 2: 749. 1841; D. Dietr., *Syn. Pl.* 3: 601. 1843; Schau. in A. DC., *Prodr.* 11: 545. 1847; C. Gay, *Hist. Fis. Chile Bot.* 5: 20. 1849; Buek, *Gen. Spec. Syn. Candoll.* 3: 494. 1858; Miers, *Trans. Linn. Soc. Lond. Bot.* 27: 103. 1871; F. Phil., *Cat. Pl. Vasc. Chil.* 219. 1881; Briq. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 1, 4 (3a), 147. 1894; Jacks. in Hook. f. & Jacks., *Ind. Kew.*, imp. 1, 2: 1178. 1895; Kuntze, *Rev. Gen. Pl.* 3 (2): 254. 1898; Thiseit.-Dyer, *Ind. Kew. Suppl.* 2: 123. 1904; Reiche & Phil. in Reiche, *Estud. Crit. Fl. Chil.* 5: 295. 1910; Sanzin, *Anal. Soc. Cient. Argent.* 88: 06, 97, 99, 100, & 134, fig. 1. 1919; Hicken, *Sert. And.* 65. 1922; Stapf, *Ind. Lond.* 4: 373 (1930) and 6: 428. 1931; Junell, *Symb. Bot. Upsal.* 1 (4): 30--31. 1934; Molfino, *Trab. Inst. Bot. Farm. Buenos Aires* 54: 112. 1935; H. S. Marshall, *Kew Bull. Misc. Inf.* 1936: 87. 1936; Latzina, *Lilloa* 1 [Index 2]: 189. 1937; Mold., *Geogr. Distrib. Avicen.* 29. 1939; Mold., *Prelim. Alph. List Inv. Names* 33 & 44. 1940; Mold., *Lilloa* 6: 431--432. 1941; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 42, 43, & 96. 1942; Mold., *Alph. List Inv. Names* 33 & 45. 1942; Mold., *Lilloa* 10: 345. 1944; Covas & Schnack, *Darwiniana* 7: 86 & 89. 1945; Jacks. in Hook. f. & Jacks., *Ind. Kew.*, imp. 2, 2: 1178. 1946; Mold., *Alph. List Cit.* 1: 96, 235, & 250. 1946; Mold., *Alph. List Inv. Names Suppl.* 1: 16. 1947; Mold., *Alph. List Cit.* 2: 443, 444, 628, & 629 (1948), 3: 894 (1949), and 4: 1035 & 1128. 1949; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 2, 101, 105, & 191. 1949; Cabrera, *Revist. Mus. La Plata, ser. 2, Bot.* 8 (33): 87--168. 1952; Troncoso, *Darwiniana* 11: 186--192, fig. 12--14. 1957; Burkart, *Excerpt. Bot. A.1:* 444. 1959; Mold., *Résumé* 121, 126, 321, 357, & 463. 1959; Jacks. in Hook. f. & Jacks., *Ind. Kew.*, imp. 3, 2: 1178. 1960; Rahn, *Bot. Tidsskr.* 56: 123. 1960; Cave, *Ind. Pl. Chromos. Numb.* 2: 63. 1961; Hansen, *Excerpt. Bot. A.3:* 208. 1961; Böcher, Hjerting, & Rahn, *Dansk Bot. Arkiv* 22: 108. 1963; McGinnes in McGinnes, Goldman, & Paylore, *Deserts World* 499. 1968; Bolkhov.,

Grif, Matvej., & Zakhar., Chromos. Numb. Flow. Pl., imp. 1, 716. 1969; Heusser, Pollen Spores Chile 62, pl. 59-674. 1971; Mold., Fifth Summ. 1: 192 & 199 (1971) and 2: 573, 652, & 896. 1971; Bolkh., Grif, Matvej., & Zakhar., Chromos. Numb. Flow. Pl., imp. 2, 716. 1974; Troncoso, Darwiniana 18: 330 & 410. 1974; Hunziker, Kurtziana 9: 141. 1976; Rogerson & Becker, Bull. Torrey Bot. Club 103: 234. 1976; Anon., Biores. Ind. 13 (4): B.191. 1977; Mold., Phytologia 44: 136 & 138 (1979) and 45: 351 & 352. 1980.

Illustrations: Gill. & Hook. in Hook., Bot. Misc. 1: pl. 46. 1829; Sanzin, Anal. Soc. Cient. Argent. 88: 100, fig. 1. 1919; Junell, Symb. Bot. Upsal. 1 (4): pl. 2, fig. 1. 1934; Troncoso Darwiniana 11: 188--190, fig. 12--14. 1957; Heusser, Pollen Spores Chile 62, pl. 59-674. 1971.

Recent collectors and authors describe this species as shrubby, 1.2 m. tall, fragrant, the branches and branchlets very slender, mostly more slender than those of *N. ephedroides*, terete, green, not nigrescent in drying, longitudinally many-striate, glabrous throughout or very obscurely pulverulent, decussate-opposite or whorled, rather stiff and erect or ascending, usually more or less swollen at the nodes, the nodes conspicuously annulate, on larger branches usually marked by a circumferential ridge, bearing a pair of opposite, minute, scale-like structures (morphologically leaves) which are 1 mm. long or less, closely appressed, often minutely ciliolate along the margins; principal internodes 0.7--7 cm. long; inflorescence spicate, axillary, borne singly or in pairs in the axils of the scale-leaves or terminating abbreviated or more or less elongated axillary twigs, these twigs (especially when short) differing in color and texture from the adjacent branchlets, more slender and gray, distinctly grayish-puberulent, mostly becoming dry and breaking off after flowering and fruiting; spikes rather short, 1--3.5 cm. long, 1--1.8 cm. wide during anthesis, very densely many-flowered, sessile or short-pedunculate, the peduncles similar to and merging into the adjacent twig, distinctly and densely white-puberulent; flowers sessile, crowded so densely on the densely white- and short-pubescent rachis that its sympodia are practically obsolete, intensely fragrant; bracts and bractlets obsolete; prophylla minute, one subtending each flower, less than 1 mm. long, stiff, truncate at both ends, ciliolate.

This species is based on *Gillies s.n.*, collected between Los Chacayos and Las Arbolitos, Mendoza, Argentina, on November 2, 1824, and is deposited in the Kew herbarium.

Rahn (1960) was not able to determine exactly the chromosome number in this species, "but in some prophases about 16 bivalents were seen", based on *Böcher, Hjerting, & Rahn 909*, determined by Troncoso. Heusser (1971) describes the pollen, based on "*Fabris, XI-1953, NY*" [= *Fabris 893*], as "Monad, isopolar, radiosymmetric; tricolporate, colpi lengthy, straight, rather narrow, constricted at the equator, pores small, ill-defined, appearing short transverse; largely subprolate, amb triangular or subtriangular; exine ca. 1 mm. in thickness, tectate, verrucate; 34--46 x 34--38 μ ."

Recent collectors have encountered the plant in sandy places at

1100--2000 m. altitude. The corollas are said to have been "blue" on Kuntze 3 and Wilczek 40, "blue to pinkish-white" on Ruiz Leal 9651, "lilac" on Ruiz Leal 6412, and "violet to rose" on Ruiz Leal 2742. Cabrera (1952) refers to the species as a nanophanerophyte. It has been collected in flower in September and from November to February, and in fruit in January and February. The length of the pistil in relation to the size of the pollen grains is discussed by Covas & Schnack (1945).

Schauer (1847) describes the species as "suffruticosa, ramosissima, ramis flexuosis teretibus striatis omnino aphyllis, spicis terminalibus multifloris, bracteis minutissimis squamaeformibus subrotundis cum calyce pubescentibus...In Andibus Chilensium prope Villa Vicenzia et civit. Platensi prope Mendozam (Gill.). Caules 3--4-pedales. Rami squamulis minutis fuscis deciduis basi subtenesi. Spicae pollicares-bipollic. Flores Melliodori. Calyx cylindraceus, angulatus, corolla duplo brevior. Corollae limbus 5-lobus."

Gay (1849) characterizes the species as "ramis flexuosis, teretibus, striatis, omnino aphyllis; spica pubescente" and then describes it further as with "Tallos de tres á cuatro piés, partidos en muchos ramos flexuosos, cilíndricos, opuestos, un tanto agudos, enteramente desprovistos de hojas, pero acompañados en su orígen de pequeñas estípulas morenas y caducas. Espigas terminales, de pulgada y media de largo, con las flores bastante apretadas y de olor de la miel. Cáliz cilíndrico, pubescente, anguloso, con cinco dientes cortos, adornado de brácteas muy pequeñas, muy cortas y ovalarias. Corola el doble mas larga y tiene su limbo mediano. Se halla en las cordilleras entre Santiago y Mendoza."

Sanzin (1919) affirms that *N. aphyllum* is characteristic of the subandean zone, from 900 to 1500 m. altitude, and encountered it "en los cerros áridos y calcáreos" in Mendoza, citing his no. 994 and Kuntze 1700. Troncoso (1957) gives its natural distribution as "desde el N de Mendoza, hasta Neuquén, noroeste de Río Negro y W de La Pampa", but Hunziker (1976) says "Interesa, en consecuencia, dar a conocer un viejo ejemplar del herbario de Córdoba, que lleva el área hacia el norte, en algo más de 3 grados de latitud, hasta la Provincia de La Rioja", citing Hieronymus & Niederlein 420.

Vernacular names recorded for the species are "barba de tigre" and "retamillo". Kurtz reports that its flower-buds are often eaten from the branches ["abgefressen"] by some wild animals, identity unspecified.

It is of interest to note that the Gillies & Hooker reference in the bibliography (above) is often inaccurately cited as "1830", the titlepage date, but was actually effectively published in 1829 according to Marshall (1936). Also, contrary to Latzina's (1937) claim that the "Botanical Miscellany" was edited by Hooker & Arnott together, it was apparently edited by Hooker alone. Latzina's work is sometimes cited as "Latzina, Index II (1937) 139".

Junell (1934) cites only Gillies s.n. in the Kew herbarium. Troncoso (1957) cites the following collections from Argentina: La Pampa: Monticelli s.n. Mendoza: Boelcke 4018 & 4027; Burkart 14081; Troncoso & Nicora s.n.; Carette 327 & s.n.; Castellanos s.n.; Girth

17; Herb. Ruiz 137; Kuntze 3; Kurtz 3455; Molfino s.n.; Perez Moreau s.n.; Ruiz Leal 2742, 2906, 5399, 6944, & 7132; Sanzin 3110; Semper 631; Soriano 4040; Torres 55. Neuquén: Cabrera 11046; Fabris 893; Hauman s.n.; Roth s.n. Río Negro: O'Donell 1951.

Chilean records for this species in previous literature are based on the Kuntze collection from Paso Cruz, which Troncoso maintains was made on the Mendozaan, not Chilean, side of the pass and which Kuntze himself has inscribed "Arg." on the accompanying label.

Material of *N. aphyllum* has been misidentified and distributed in some herbaria as *N. ephedroides* Griseb. On the other hand, the Fabris 2178, distributed as *N. aphyllum*, actually is *Diostea juncea* (Gill. & Hook.) Mold., while Dessauer s.n. [Cerro de la Viscacha, 1875] and Negrete s.n. are *D. scoparia* (Gill. & Hook.) Miers.

Citations: ARGENTINA: Mendoza: Bartlett 19475 (Ca--772438, Mi, W--1904523); Bodenbender 53 [Kurtz 10008; Herb. Osten 13015] (Ug); Burkart 8415 (W--1858300); A. Castellanos s.n. [Herb. Inst. Miguel Lillo 15206; Herb. Mus. Argent. Cienc. Nat. 36868] (E--2198244, N); Gillies s.n. [betw. Chacayos & Las Arbolitos] (K--type, N--isotype, N--photo of type, Z--photo of type); Gussfeldt s.n. [Diamente, Pampa, Jan. '83] (B); Kuntze s.n. [Paso Cruz, 1700 m., I. 92] (B, N, W--701193); Kurtz 7204 (B), 7422 (B); Ruiz Leal 2742 (N), 6412 (N), 6944 (N), 6955 (N), 6970 (N), 7132 (N), 9651 (N), 16434 (Tu--155535), 16975 (Tu--137905); Sanzin s.n. [Herb. Mus. Nac. Hist. Buenos Aires 25/2217] (N); Semper s.n. [Ruiz Leal 10255] (N); Wilczek 40 (Cb, Cb, N). Neuquen: Fabris 893 (N); Haumann s.n. [Zapala, II.1902] (Br).

NEOSPARTON DARWINII Benth. in Benth. & Hook. f., Gen. Pl. 2 (2): 1144. 1876.

Synonymy: *Neosparton darwinii* Benth. & Hook. f. apud Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 2: 303. 1894. *Lippia darwinii* (B. & H.) Speg., Anal. Soc. Cient. Argent. 55: 242. 1902. *Lippia darwinii* Speg. apud Prain, Ind. Kew. Suppl. 3: 104, in syn. 1908. *Neosparton darwinii* Benth. & Hook. apud Troncoso in Cabrera, Fl. Prov. Buenos Aires 5: 125. 1965.

Bibliography: Benth. in Benth. & Hook. f., Gen. Pl. 2 (2): 1144. 1876; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 2: 303. 1894; Speg., Anal. Soc. Cient. Argent. 55: 242. 1902; Speg., Nov. Add. Fl. Patag. 2: 65. 1902; Prain, Ind. Kew. Suppl. 3: 104. 1908; Mold., Prelim. List Inv. Names 33. 1940; Mold., Lilloa 6: 432. 1941; Mold., Suppl. List Inv. Names 6 & 12. 1941; Mold., Alph. List Inv. Names 30 & 33. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 43 & 96. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 2: 303. 1946; Mold., Alph. List Cit. 1: 142 & 163 (1946) and 2: 444. 1948; H. N. & A. L. Mold., Pl. Life 2: 55. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 105 & 191. 1949; Troncoso, Darwiniana 11: 177--180, fig. 6 & 7. 1957; Burkart, Excerpt. Bot. A.1: 444. 1959; Mold., Résumé 126, 312, 321, & 463. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 2: 303. 1960; Troncoso in

Cabrera, Fl. Prov. Buenos Aires 5: 124 & 125, fig. 43. 1965; Mold., Fifth Summ. 1: 199 (1971) and 2: 553, 573, & 896. 1971; Troncoso, Darwiniana 18: 330 & 410. 1974.

Illustrations: Troncoso, Darwiniana 11: 178 & 179, fig. 6 & 7. 1957; Troncoso in Cabrera, Fl. Prov. Buenos Aires 5: 124, fig. 43. 1965.

Bentham's original (1876) description of this species is: "typicam [of the genus] e prov. Catamarca non vidimus, sed congener videtur specimen a Darwinio (*N. Darwinii*, nov.) in monte Hermoso juxta Bahía Blanca lectum. Habitus inflorescentia calyx corolla et ovarium omnino conveniunt, specificè differre videtur bracteis late ovatis calycem aequantibus v. subsuperantibus et staminibus e tubo breviter exsertis. Fructus tamen deest." In some previous publications I regarded *N. darwinii* as conspecific with *N. ephedroides*, from which it is virtually impossible to differentiate in the herbarium. It is said to differ from the latter in the characters listed by Bentham. I at one time thought that it might differ in having a very short and included pistil, but this character does not hold for even the type collection. Argentine botanists maintain the two taxa as separate, pointing out (as "evidence") that *N. darwinii* inhabits only an area in the province of Buenos Aires at 50 m. altitude, while *N. ephedroides* inhabits an Andean region in Catamarca, Los Andes, Mendoza, Salta, and Tucumán at 3500 m. altitude.

Troncoso (1965) has given us an amplified description of the lowland form: "Arbusto subáfilo, efedroide, de $\pm 1,50$ m de altura, muy ramoso. Ramas rígidas, erguidas, de ápice generalmente seco, cilíndrico-estriadas. Estrías numerosas (26)--29--34--(35). Hojas reducidas a una escamita o mucrón subtriangular de ápice obtuso, precozmente caducas, la de los vástagos jóvenes algo mayores, de 4--5 mm de longitud, lanceoladas, subcarnosas. Espigas contraídas densas, axilares, subglobosas, opuestas, subsésiles. Flores blancas. Brácteas obovado-cuneadas, caducas, membranáceas, de borde superior irregular, glabras, de 5--5.5 mm de longitud, igualando o superando el cáliz. Cáliz tubuloso, lustroso, glabro, 5-dentado, dientes incurvos, subtriangulares, ciliolados. Corola subactinomorfa, glabra. Drupa globosa, papiráceo-lustrosa, epicarpio membranaceo, fibroso interiormente... Endemico del sudoeste de la Provincia [Buenos Aires], en los médanos costaneros de Coronel Dorrego y Coronel Rosales." She cites Cabrera & Fabris 14910, Darwin 528, and Veretoni s.n.

Bentham has placed a misleading sketch on the holotype specimen giving the appearance of epigyny. He says "Ovarium 2-loculare, loculis 2-ovulatis" and "Monte Hermoso outside Bahía Blanca coast of Patagonia 2 Oct. [1832]". The bracts are quite obvious.

Although binomials published in Bentham & Hooker's "Genera Plantarum" are usually accredited to both authors, it is plainly stated by Bentham in Journ. Linn. Soc. Lond. Bot. 20: 304--308 (1883), in his paper entitled "On the joint and separate work of the authors of Bentham and Hooker's Genera Plantarum", that the section on the *Verbenaceae* was done entirely by Bentham.

As stated above, Charles Darwin's original type (no. 528) came from Monte Hermoso, outside of Bahia Blanca, coast of Patagonia", was collected on October 2, 1832, and is deposited in the Kew herbarium. More recent collectors have found it in flower in November and December.

Citations: ARGENTINA: Buenos Aires: Burkart 25637 (W--2568008, Z); C. Darwin 528 (K--type, N--photo of type, Z--photo of type); Doello-Jurado s.n. [Herb. Mus. Nac. Hist. Nat. 24/1711] (N).

NEOSPARTON EPHEDROIDES Griseb., Abhandl. Gesell. Wiss. Götting.

19: [Pl. Lorentz. 197--198] 245, pl. 2, fig. 6. 1874.

Synonymy: *Neosparton striatum* R. A. Phil., Anal. Mus. Nac. Chile 1: [Cat. Praev. Pl. Itin. Tarap.] 60. 1891. *Neosparton ephedroides* Griseb. apud Kuntze, Rev. Gen. Pl. 3 (2): 254. 1898. *Neosparton ephedroides* Griseb. ex Mold., Alph. List Cit. 3: 690, sphalm. 1949.

Bibliography: Griseb., Abhandl. Gesell. Wiss. Götting. 19: [Pl. Lorentz. 197--198] 245, pl. 2, fig. 6 (1874) and 24: [Symb. Fl. Argent.] 279. 1879; Hieron., Bol. Acad. Nat. Cordoba 4: 407. 1881; R. A. Phil., Anal. Mus. Nac. Chile Bot. 1: [Praev. Pl. Itin. Tarap.] 60. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 2: 303. 1894; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 150 & 154, fig. 58 G--K. 1895; Kuntze, Rev. Gen. Pl. 3 (2): 254. 1898; Briq., Ann. Conserv. Jard. Bot. Genève. 4: 22. 1900; Briq. in Chod. & Wilczek, Bull. Herb. Boiss., ser. 2, 2: 543. 1902; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 1, 291. 1903; M. Kunz, Anatom. Untersuch. Verb. 41. 1911; Seckt, Anal. Soc. Cient. Argent. 74: 185. 1912; Sanzin, Anal. Soc. Cient. Argent. 88: 96--100 & 134. 1919; Hauman, Anal. Mus. Nac. Hist. Nat. Buenos Aires 32: 473. 1925; Stapf, Ind. Lond. 4: 373. 1930; Junell, Symb. Bot. Upsal. 1 (4): 30--31, pl. 2, fig. 1. 1934; Latzina, Trab. Inst. Bot. Farm. Buenos Aires 54: 112. 1935; Latzina, Lilloa 1 [Index]: 189. 1937; Mold., Geogr. Distrib. Avicen. 29. 1939; Mold., Prelim. Alph. List Inv. Names 33. 1940; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 2, 291. 1941; Mold., Lilloa 6: 432--433. 1941; Mold., Alph. List Inv. Names 33. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 42, 43, & 96. 1942; Mold., Lilloa 8: 427 (1942) and 10: 345. 1944; Mold., Phytologia 2: 107. 1944; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 2: 303. 1946; Mold., Alph. List Cit. 1: 95, 97, & 248 (1946), 2: 328, 377, 384, 440, 599, & 600 (1948), 3: 672, 690, 812, 813, 900, 909, & 911 (1949), and 4: 1040, 1056, 1120, 1197, & 1302. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 101, 105, & 191. 1949; Acevedo de Vargas, Bol. Mus. Nac. Hist. Nat. Chile 25: 45--46. 1951; Darlington & Wylie, Chromos. Atl., ed. 2, 323. 1956; Cabrera, Revist. Invest. Agric. 11: 331, 368, & 398. 1957; Troncoso, Darwiniana 11: 172--177, pl. 3-5. 1957; Burkart, Excerpt. Bot. A.1: 444. 1959; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 3, 291. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 2: 303. 1960; Muñoz Pizarro, Espec. Pl. Descr. Philip. 110. 1960; Rahn, Bot. Tidsskr. 56: 123. 1960; Mold., Phytologia 9: 113 & 114. 1963; Troncoso in Böcher, Hjerting, & Rahn, Dansk Bot. Arkiv 22: 108--

109. 1963; McGinnes in McGinnies, Goldman, & Paylore, Deserts World 438 & 490. 1968; Bolkh., Griff, Matvej., & Zakhar., Chromos. Numb. Flow. Pl., imp. 1, 716. 1969; Heusser, Pollen Spores Chile 62. 1971; Mold., Fifth Summ. 1: 192 & 199 (1971) and 2: 573 & 896. 1971; Bolkh., Grif, Matvej., & Zakhar., Chromos. Numb. Flow. Pl., imp. 2, 716. 1974; Troncoso, Darwiniana 18: 328--330 & 410, fig. 7. 1974; Mold., Phytologia 45: 352. 1980.

Illustrations: Griseb., Abhandl. Gesell. Wiss. Gotting. 19: [Pl. Lorentz.] pl. 2, fig. 6. 1874; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 150, fig. 58 G--K. 1895; Junell, Symb. Bot. Upsal. 1 (4): pl. 2, fig. 1. 1934; Troncoso, Darwiniana 11: 173--175, fig. 3--5 (1957) and 18: 329, fig. 7. 1974.

A fastigiate shrub, 1.5--2.5 m. tall, gray-green, *Ephedra*-like; branches, branchlets, and twigs terete, ascending or erect, green, straight and stiff, longitudinally many-striate, usually glabrous and shiny throughout when mature, the larger branches and branchlets swollen at the nodes, the young growth sometimes with the many longitudinal striations densely white-farinose in the sulcations, the ridges remaining green and smooth, giving a striped appearance, the twigs sharp and spine-like apically, often bending sharply and ascending parallel to the branchlets; nodes conspicuously annulate, almost appearing as though articulate on older branches (but apparently not so, since breaking mostly occurs in the internodes), the annular ring prominent on smaller twigs, sunken between 2 parallel rings on older wood, mostly bearing a pair of decussate-opposite scale-like structures (morphologically leaves); principal internodes 1--9 cm. long; inflorescence spicate, but the spikes so abbreviated and densely many-flowered as to appear glomerate, borne in opposite pairs at the lower nodes of the current season's growth, 1--2 cm. long, very densely many-flowered, sessile, the glabrous rachis only visible after the flowers and fruit have fallen off; bractlets apparently present and subtending the flowers, but soon caducous, broadly elliptic or spatulate, about 5 mm. long and 3 mm. wide, rounded and crenate apically from the widest part, basally cuneate and entire, glabrous; flowers with a peculiar perfume; fruit described as white.

Grisebach's original (1874) description of this species is: "Frutex 6pedalis et ultra, dichotomia ramorum erectorum supra axes abortivos apice pungentes eminens, trunco inferne 2--3'', ramis sub apice acuminato 1'' crassis, internodiis 2--3'' longis, junioribus vernicoso-nitidulis; nodi in annulum margine sphacelatum (foliorum scilicet rudimenta) dilatati; spicae 6--8'' longae, ad basin usque densiflorae; bractee ovato-subrotundae, sphacelato-membranaceae, nodulo dilatato apice truncato-constricto, cui flos inseritur, vix majores; calyx sub anthesi 2'', corolla 4'' longa, haec 'albae'; filamenta anthera paullo longiora; stylus 4'' longus; drupa 'alba', ovali-compressa, calyce inclusa, 3'' longa, 1 1/2'' lata."

The species appears to be based on Lorentz 357 from Catamarca, Argentina, "in deserto Campo del Arenal pr. S. José frequens in arena mobile supra Nacimientos", deposited in the Göttingen her-

barium, where it was photographed by Macbride as his type photograph number 17580. Recent collectors have found the plant growing in huge shifting sand-dunes in dry river courses, at altitudes of 1200--3570 m., flowering from October to February, in fruit in December and April. Jörgensen reports it common on "medanos" in the Andean region. McGinnes (1968) refers to it as a nanophanerophyte. Sanzin (1919) affirms that it is characteristic of the subandean zone, from 900 to 1500 m. altitude.

Rahn (1960) reports the chromosome number as "about 16 bivalents"; Bolkhovskikh and his associates (1969) give it as 32, based on the work of Covas (1950).

Vernacular names recorded for the species include "badre", "barc", "bodre", "chinquillo", "pichanilla", "retamillo", and "retamo".

The corollas are said to have been "white" on Burkart 17534 and Cabrera 8934, "yellow" on Ruiz Leal 9720, "yellowish-rose" on Venturi 6928, and "blue" on Chodat & Wilczek 40 according to Briquet (1900).

The stems and branches are used to cover the roofs of native houses in the area where it grows. Troncoso (1963) says of the species: "In Argentina probably with bicentric distribution. Deviating morphologically in the small southern area at Malargüe... In Chile in the Cordillera at Antofagasta." In her 1974 work she cites Cabrera 8934 from Catamarca. In her 1957 work she cites the following: Catamarca: Castellanos s.n.; Castellón 3346 & s.n.; Falcone & Castellanos s.n.; Jörgensen 1731; Lillo s.n.; Lorentz 357, 460, & s.n.; Philippi s.n.; Sayago 2264; Schickendantz 105, 250, & 262; Schreiter 6314, 6340, & 7112; Vervoort 730. Mendoza: Boelcke 4204; Covas s.n.; Ruiz Leal 7508 & 7700. Salta: Burkart s.n.; Castellanos s.n.; Spegazzini s.n. Tucumán: Castellanos s.n.; Cozzo 13.

She comments that "Los ejemplares de Mendoza presentan a primera vista algunas diferencias morfológicas con los típicos de Catamarca: las ramas laterales con más cortas, de 8--30 cm de long. y de entrenudos más breves (2--8 cm de long.), además el número de estrías es menor (20--23). El ejemplar SI19.948, presenta inflorescencias contraídas axilares, o terminales en ramitas laterales de 2,5--11 cm de long. El estudio de mejor material permitirá determinar si estos caracteres poseen valor varietal."

Heusser (1971) lists *N. ephedroides* from "the high cordillera of the Province of Antofagasta", Chile.

It should be noted that some recent authors cite the Philippi reference in the bibliography (above) as "14: 60. 1891" and the Engler & Prantl (1895) reference as "1897", which is incorrect. The fruits are inaccurately described as "berries" by several collectors, although they are plainly drupes.

Philippi's *Neosparton striatum*, based on Lorentz 197 from 3570 m. altitude at Antofagasta Alta, has in the past been considered to have been collected in Antofagasta, Chile, but Troncoso has shown that the locality designated is actually in the the Province of Los Andes, Argentina -- the type is deposited in the Berlin herbarium, where it was photographed by Macbride as his type

photograph number 17581. It is described by Philippi as follows: "... ramis egregie striatis, haud verrucosis; nodis 'annulo margine sphacelato' nullo circumdati; fructu elongato, tereti. Ad Antofagasta frequens. Frutex orgyalis, sicut *N. ephedroides* Gris.; rami majores basi 4 mm., sub apice 2 1/2 mm. crassi, rami saepe verticillati. In nodis loco foliorum squamae duae oppositae, minimi, latiores quam longae, fuscae, sed nunquam annulus margine sphacelatus conspicitur. Pedunculus communis vix 3 mm. longus, dense squamis rufis, illis ad nodos ramorum sitis simillimis, pariter latioribus quam latis (quas Grisebach bracteas vocat) tectus; bracteae ad originem singulorum florum ad marginem angustissimum reductae. Calyx fere 5 mm. longus, corolla ochroleuca 8 mm. Fructus calyce demum obovato-oblongo, apice clauso, viridi, margine nigrescente inclusus, siccus, 4 mm. longus, vix 2 mm. crassus, castaneus, ideo valde a 'drupa alba, ovali compressa' *N. ephedroidis* distinctus." It would seem that more field study is called for in order to ascertain if this form may not actually be distinct, at least in varietal rank.

Citations: ARGENTINA: Catamarca: *Cabrera* 8934 (N); *Castellanos* s.n. [Herb. Mus. Argent. Cienc. Nat. 30/603] (N, N); *Castillon* 3346 [Herb. Inst. M. Lillo 38000] (N, N); *Jørgensen* 1731 [Herb. Osten 11093] (Cb, E--823756, G, N, N--photo, Ug, W--917968, Z--photo); *Lorentz* 93 (B, N), 357 [Macbride photos 17580] (B--isotype, F--663059-- photo of 2 isotypes, K--isotype, Kr--photo of 2 isotypes, N--photo of 2 isotypes, W--photo of 2 isotypes, Z--photo of isotype), 367 (B, N--photo, Z--photo), 460 (B, N, N--photo, Z--photo), s.n. [Laguna Blanca, 1872] (B); *R. A. Philippi* s.n. [Antofagasta, 3570 m.; Herb. Mus. Nac. Hist. Nat. Chile 42500; Macbride photos 17581] (B, F--663060--photo, K, Kr--photo, N, N--photo, N--photo, N--photo, N--photo, Vu, W, W--photo, Z--photo, Z--photo); *Schickendantz* 105 (B, B, Cb, K, N, N--photo, Z--photo), 250 (B), 262 (B); *Schreiter* 6340 [Herb. Inst. M. Lillo 32417] (N), s.n. [XI.1915] (N); *Venturi* 6928 (W--1591499); *Ver-voorst* 730 (Bl--97387); *E. W. White* 38 (Bm). Mendoza: *Ellenberg* 4556 (Ld); *Ruiz Leal* 7508 (N), 7700 (N, Tu--155518), 9720 (N, Tu-137897). Salta: *Burkart* 17534 (W--2746855); *Cabrera* 10596 (Vi); *R. E. Fries* s.n. [19.10.48] (S); *Moldenke & Moldenke* 19734 (Ac, B, Bi, Bm, Bs, Ca, Es, F, Fg, Gy, Gg, Hk, Hw, Ld, Le, Lg, Lm, Lw, Mi, Mm, Mr, Ms, N, N, N, No, Ok, Ot, Rs, S, Sm, Sm, Ss, Ss, Ut, Ws, Z); *Roig* 15428 (Es); *C. Skottsberg* s.n. [18/10/1947] (S), s.n. [19/10/1948] (Go). Tucumán: *Schreiter* 7112 [Herb. Inst. M. Lillo 32597] (N, Ug, W--1802560).

NEOSPARTON PATAGONICUM Troncoso, Darwiniana 11: 180--186, fig. 8--11. 1957.

Bibliography: Troncoso, Darwiniana 11: 180--186, fig. 8--11. 1957; *Cabrera*, Bol. Soc. Argent. Bot. 7: 150. 1958; *Burkart*, Excerpt. Bot. A.1: 444. 1959; *Mold.*, Résumé 126 & 463. 1959; *G. Taylor*, Ind. Kew. Suppl. 13: 93. 1966; *Ruiz Leal*, Revist. Facult. Cienc. Agrar. 15: 244 & 245, pl. 3. 1969; *Mold.*, Fifth Summ. 1: 199 (1971) and 2: 896. 1971; Troncoso, Darwiniana 18: 330 & 410. 1974.

Illustrations: Troncoso, Darwiniana 11: 182--185, fig. 8--11. 1957; Ruiz Leal, Revist. Facult. Cienc. Agrar. 15: 244, pl. 3. 1969.

Troncoso (1957) says of this species: "Especie patagónica, localizada en las regiones de Colonia Sarmiento y Puerto Deseado. Habita en lugares arenoso-pedregosos y salitrosos, a orillas de ríos y parece planta.....escasa. El ejemplar de San Julian presenta las siguientes diferencias con los ejemplares típicos procedentes de Chubut: ramas en general más delgadas, de 2--3 mm de diámetro, las de mayor edad hasta 4 mm, hojitas algo más desarrolladas, más anchamente ovales, de 2--7 mm de longitud x 1,5--4 mm de latitud, con breve peciolo delgado, de 0,5--1 mm de longitud x 0,7--1 mm de latitud, cáliz subglabro y lustroso, corola de tubo más breve. En el ejemplar LPS21935, único fructificado (frutos en un sobre), los frutos con le mitad exertos del cáliz pero todos ellos están atacados y transformados en agallas. La carencia de frutos maduros y sanos y la escasez de material no permite valorar definitivamente esta diferencias."

The species is based on *A. Soriano 4012*, collected at Sarmiento, between km. 131 & 132, on the road to Comodoro Rivadavia, Chubut, Argentina, on December 1, 1949, and is deposited in the San Isidro herbarium. Troncoso (1957) cites also *Grondona 5808* and *Soriano 3231* from the same locality and *Ameghino s.n.* [LPS 21935, 21936, 21937, 21938, and 21939] from San Julián, Santa Cruz, originally distributed as *Lippia darwinii* (B. & H.) Spag.

ADDITIONAL NOTES ON THE GENUS *PARODIANTHUS*. I

Harold N. Moldenke

Additional bibliographic information and herbarium material that has come to me since my original publication on this genus in 1941 is herein summarized. Herbarium acronyms employed are those used in all my papers in the present journal since 1931 and are fully explained in my Fifth Summary 2: 795--801 (1971).

PARODIANTHUS Troncoso

Additional & emended bibliography: Hill & Salisb., Ind. Kew. Suppl. 10: 233. 1947; Angely, Cat. Estat. Gen. Bot. Fan. 17: 5. 1956; R. C. Foster, Contrib. Gray Herb. 184: 170. 1958; Mold., Phytologia 7: 244--247. 1960; Mold., Biol. Abstr. 36: 719. 1961; Hocking, Excerpt. Bot. A.4: 223. 1962; F. A. Barkley, List Ord. Fam. Anthoph. 76 & 194. 1965; Caro, Kurtziana 2: 217--219. 1965; Hunziker, Kurtziana 2: 220 & Add. 223. 1965; Mold., Phytologia 12: 6. 1965; Airy Shaw in J. C. Willis, Dict. Flow. Pl., ed. 7, 835. 1966; Anon., Torrey Bot. Club Ind. Am. Bot. Lit. 3: 308. 1969; Rouleau, Guide Ind. Kew. 140 & 353. 1970; Mold., Fifth Summ. 1: 6, 199, &